

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application. Please insert the phrase "I claim:" at the beginning of the claims just prior to claim 1.

Listing of Claims:

I claim:

Claim 1 (currently amended). A method for diagnosis of Alzheimer's disease in a human subject which comprises screening for the presence of a cell cycle regulatory defect at the G1/S phase transition in non-neuronal cells of the human subject.

Claim 2 (original). A method according to claim 1 wherein a reduction in the effectiveness of the checkpoint control at the G1/S transition is taken as an indication that the subject has Alzheimer's disease.

Claim 3 (original). A method according to claim 1 or claim 2 wherein screening for the presence of a cell cycle regulatory defect at the G1/S phase transition is carried out by: inducing cell division in the non-neuronal cells and testing the responsiveness of the cells to a cell division inhibitor substance, wherein a reduced responsiveness to the cell division inhibitor substance in cells from the subject, as compared to control cells not having a cell cycle regulatory defect at the G1/S phase transition, is taken as an indication of the presence of a cell cycle regulatory defect at the G1/S phase transition.

Claim 4 (original). A method according to claim 3 wherein the cell division inhibitor substance is a specific G1 inhibitor.

Claim 5 (original). A method according to claim 1 or claim 2 wherein screening for the presence of a cell cycle regulatory defect at the G1/S phase transition is carried out by: inducing cell division in the non-neuronal cells and testing the responsiveness of the cells to a stimulus that induces cell cycle arrest, wherein a reduced responsiveness to said stimulus in-cells from the subject, as compared to control cells not having a cell cycle regulatory defect at the G1/S phase transition, is taken as an indication of the presence of a cell cycle regulatory defect at the G1/S phase transition.

Claim 6 (original). A method according to claim 5 wherein the stimulus that induces cell cycle arrest is selected from oxidative stress, ionising radiation, hypoxia, or UV radiation.

Claim 7 (currently amended). A method according to ~~any one of claims~~ claim 3 to 6 wherein the responsiveness of the cells to the cell division inhibitor substance or stimulus that induces cell cycle arrest is tested by a cell proliferation assay, relatively higher proliferative activity in cells from the subject, as compared to control cells not having a cell cycle regulatory defect at the G1/S phase transition, following treatment with the cell division inhibitor or stimulus that induces cell cycle arrest being taken as an indication of the presence of a cell cycle regulatory defect at the G1/S phase transition.

Claim 8 (currently amended). A method according to ~~any one of claims~~ claim 3 to 6 wherein the responsiveness of the cells to the cell division inhibitor substance or stimulus that induces cell cycle arrest is tested by calculating the relative lengthening of the G1 phase of the cell cycle in cells from the subject, a reduced relative lengthening of the G1 phase in the presence of the cell division inhibitor substance or stimulus in said cells, as compared to control cells not having a cell cycle regulatory defect at the G1/S phase transition, being taken as an indication of a cell cycle regulatory defect at the G1/S phase transition.

Claim 9 (currently amended). A method according to ~~any one of claims~~ claim 3 to 6 wherein the responsiveness of the cells to the cell division inhibitor substance or stimulus that induces cell cycle arrest is tested by analysis of expression of a cell cycle regulatory protein or an mRNA encoding a cell cycle regulatory protein.

Claim 10 (original). A method as claimed in claim 9 wherein the cell cycle regulatory protein is selected from the group consisting of CDKN3, p15ink4B, p16ink4A, p19ink4D, p27kip1, p21cip1, p57kip2 and TP53.

Claim 11 (original). A method according to claim 5 wherein the stimulus that induces cell cycle arrest is DNA damage and the responsiveness of the cells to the cell this stimulus is tested by analysis of expression of a DNA damage-response element.

Claim 12 (original). A method according to claim 11 wherein the DNA damage-response element is selected from the group consisting of TP53, Gadd34, Gadd45A, Gadd45B, Gadd45G, Gadd153 and PCNA.

Claim 13 (currently amended). A method according to ~~any one of claims~~ claim 3 to 6 wherein the responsiveness of the cells to the cell division inhibitor substance or stimulus that induces cell cycle arrest is tested by assessment of cell viability or cell death, wherein increased cell survival or a reduced degree of cell death in said cells, as compared to control cells not having a cell cycle regulatory defect at the G1/S phase transition, following exposure to the cell division inhibitor or other stimulus that induces cell cycle arrest is taken as an indication of the presence of a cell cycle regulatory defect at the G1/S phase transition.

Claim 14 (currently amended). A method according to ~~any one of claims~~ claim 3 to 6 wherein the responsiveness of the cells to the cell division inhibitor substance or stimulus which elicits cell cycle arrest is tested by analysis of expression of a cell death related protein or an mRNA encoding a cell death related protein.

Claim 15 (original). A method according to claim 14 wherein the cell death related protein is a member of the bcl-2 family of proteins.

Claim 16 (currently amended). A method according to ~~any one of claims~~ claim 3 to 6 wherein the responsiveness of the cells to the cell division inhibitor substance or stimulus which elicits cell cycle arrest is tested by assessment of DNA content of the cells with or without cell cycle analysis.

Claim 17 (currently amended). A method according to ~~any one of claims~~ claim 1 to 16 wherein the non-neuronal cells are lymphocytes.

Claim 18 (currently amended). A method according to ~~any one of claims~~ claim 1 to 17 for diagnosis of sporadic Alzheimer's disease.

Claims 19-29 (withdrawn).